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Outcomes of a Smoking Cessation Clinic in Cardiology Services, Vancouver, Canada

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Background

• Smoking is a modifiable risk factor for cardiac diseases and also worsens the natural history of these conditions.

• As a result of the addictive nature of tobacco, populations with cardiac conditions often continue to smoke at high rates (up to 62%), even after experiencing life-threatening cardiac events.

•Continued smoking by patients with prior or existing cardiac conditions is associated with increased risk for subsequent fatal cardiac events.

•Treating tobacco dependence in these patient populations can significantly reduce the excess mortality currently observed.

• However, few studies in Canada have examined smoking cessation outcomes among cardiac patients in outpatient clinic settings.

•The purpose of our study is to examine pilot treatment outcomes of an outpatient Smoking Cessation Clinic (SCC) provided within Cardiology Services.

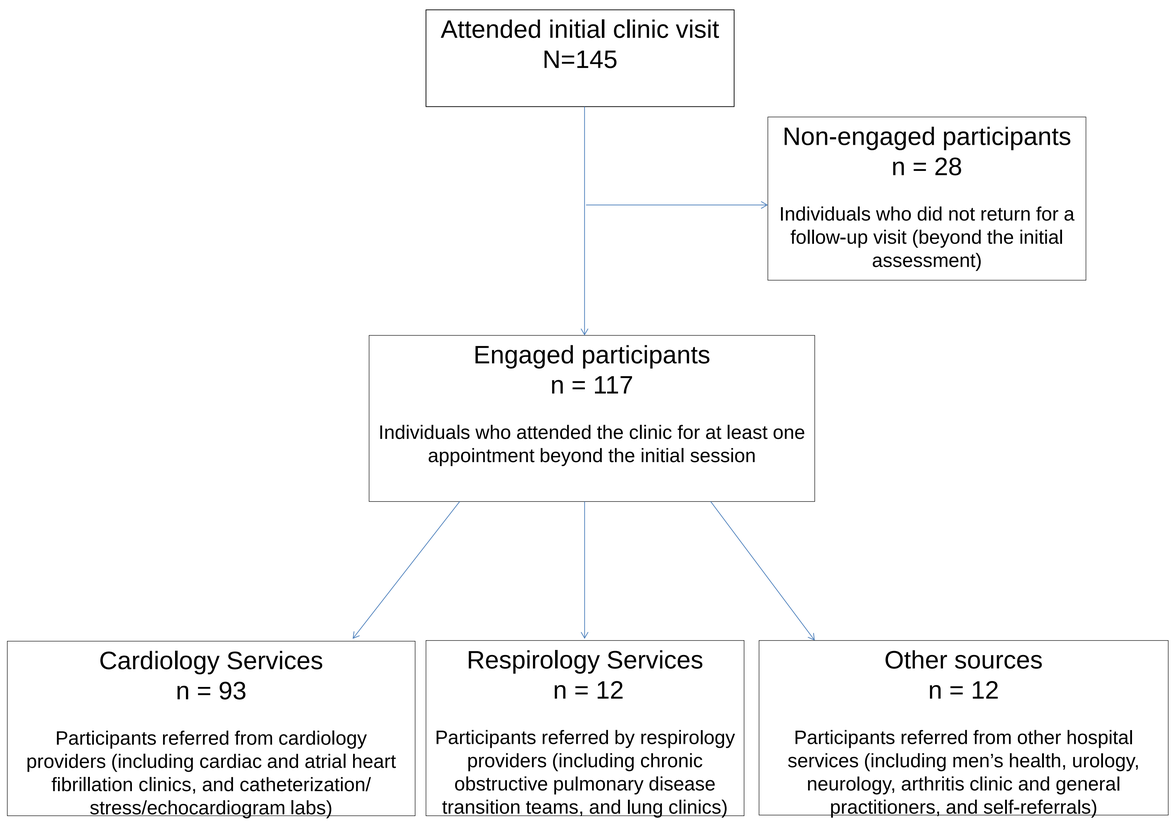
Methods

• This study is based on a retrospective review of the charts of 145 participants of the SCC (between Sept 2010 and May 2012).

•117 participants engaged in the program (i.e., attended at least one follow-up visit beyond the initial visit, **see figure 1**).

• Data on demographics, smoking and cessation attempt history, medical history (including screening for psychiatric disorders, substance abuse, hypertension, high-cholesterol, diabetes, cardiovascular disease, COPD, eating disorder, seizure disorder, obesity, kidney disease, asthma, HIV, HCV, and cancer), nicotine dependence scores, smoking cessation pharmacotherapy, and number of visits to the program (**see table 1**).

• The main outcomes of interest were: 1) self-reported 7-day point-prevalence of smoking abstinence verified by expired CO level, and 2) smoking reduction (defined by a 50% or more reduction in average number of cigarettes smoked per day compared to baseline).



Brief Program Description

Treatment: The SCC takes a 'longitudinal' tobacco treatment approach (a process which has no set end-point) in recognition of tobacco dependence as a chronic, relapsing medical condition whereby smoking cessation is considered "a process and not an event." The clinic runs 3 full days a week and is staffed by a team of specialists in tobacco dependence treatment comprising of two nurses and a physician. Participants are provided with pharmacotherapy and brief individual counselling at each clinic visit. In addition, all participants are given information for referral to a province-wide telephone "quit line".

Treatment completion*:* Treatment is ongoing until there is mutual agreement between the participant and the provider that treatment is completed, whether the participant had achieved cessation or not.

Table 1. Characteristics of participants attending a smoking cessation programme in cardiology services by referral source

	Total (N = 117)		Cardiology (n = 93)		Respirology (n = 12)		Other sources (n = 12)	
	N	%	n	%	n	%	n	%
Gender (missing=1)								
Male	78	66.4	61	66.3	7	58.3	9	75.0
Female	39	33.6	31	33.7	5	41.7	3	25.0
History of a psychiatric/substance use disorder								
Neither	41	34.2	32	34.4	2	16.7	6	50.0
Psychiatric Disorder Only	24	20.5	19	20.4	1	8.3	4	33.3
Substance Use Disorder Only	24	20.5	20	21.5	2	16.7	2	16.7
Both	29	24.8	22	23.7	7	58.3	0	0.0
Stage of change								
Precontemplative	4	3.4	4	4.3	0	0.0	0	0.0
Contemplative	31	26.5	24	25.8	4	33.3	3	25.0
Preparation	73	62.4	56	60.2	8	66.7	9	75.0
Action	9	7.7	9	9.7	0	0.0	0	0.0
Evidence-based modalities used to quit in the past (i.e., NRT, oral medications, counseling)	92	78.6	72	77.4	11	91.7	9	75.0
For how long able to quit at last attempt								
Less than 1 week	25	21.4	20	21.5	3	25.0	2	16.7
1 week to less than 1 month	17	14.5	15	16.1	1	8.3	1	8.3
7 months to 1 year	42	35.9	32	34.4	6	50.0	4	33.3
Greater than 1 year	33	28.2	26	28.0	2	16.7	5	41.7
Income source (missing=1)								
Disability/Social Assistance	35	30.2	27	29.3	6	50.0	2	16.7
Canadian Pension Plan	36	31.0	27	29.3	4	33.3	5	41.7
Earned Income	45	38.8	38	41.3	2	16.7	5	41.7
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Age (years)	58.5	10.5	58.4	9.9	57.1	8.6	60.3	15.6
Age at smoking initiation (years)	16.4	4.4	16.9	4.6	14.3	2.7	14.1	2.8
Importance of quitting (on a scale of '0' to '10')	8.6	2.0	8.6	1.9	9.1	1.1	7.6	3.2
Confidence in quitting (on a scale of '0' to '10')	6.3	2.6	6.4	2.6	7.0	2.4	5.2	2.8
Average cigarettes smoked per day	15.9	8.0	15.8	7.6	13.3	6.0	19.0	11.9
FTND at baseline	4.2	2.4	4.2	2.4	4.0	1.7	4.4	2.8
Expired CO level at baseline	15.8	9.6	15.0	10.2	18.9	5.6	18.3	7.8
Number of medical co-morbidities	2.8	1.3	2.8	1.3	3.0	1.3	2.4	1.3
Total visits to programme	5.0	3.3	5.0	3.3	5.3	3.6	4.6	2.9
Length of time in the programme (in weeks)	19.1	16.2	19.5	16.5	23.4	17.0	11.3	10.3

Results

• Participants were primarily male (66.4%) and on average were 58.5 years (SD = 10.5) of age. A greater proportion of individuals referred from Respirology had both a history of substance use disorder and mental illness (58.3%) and individuals in the Cardiology group initiated smoking at a later age than those in the Respirology and "Other" referral source groups (p = .024).

• 35.0% (41/117) of participants achieved smoking cessation, whereas 42.1% (32/76) of those who did not were able to reduce their cigarette use to 50% (or less) of their baseline consumption.

•There was a significant linear trend towards smoking cessation with greater length of time in the programme ($\chi 2 = 5.2$ [df = 1], p = .023, **see figure 2**).

• In multivariate logistic regression analysis, salient predictors of smoking cessation included being male (OR= 3.2, 95% CI = 1.0-10.0) and a greater length of time (in weeks) in the programme (OR= 1.0, 95% CI = 1.0-1.1).

Conclusions

•Providing longitudinal, individualized, evidence-based approaches to tobacco treatment within Cardiology Services is feasible.

•The modest outcomes from this pilot study support the need for smoking cessation treatment provision in hospital Cardiology settings.

•Such interventions reduce the disproportionate burden of tobacco use and related disease among populations with medical co-morbidity

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